IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CC40 DMG Information Elements CIDs | | | | |
| Date: 2022-06-13 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Assaf Kasher | Qualcomm |  |  | assaf.kasher@gmail.com |
|  |  |  |  |  |

Abstract

This document proposes resolution to some CC40 information elements CIDs

CIDs are 331, 332, 643, 420, 653, 839, 648, 333, 240, 258, 395, 651, 424, 425, 259, 421, 422, 423, 840, 426, 514, 427

Rev1: changes to beam lists description in clause 11.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 331 | 9.4.2.319 | 36.55 | "The DMG Sensing Image Range-Direction subfield is set to 1 to indicate the capability to report three-dimension Range-Direction image as a sensing responder where direction is Transmit Beam Index and Receive Beam Index." The terms Transmit/Receive Beam Index does not appear in any element. Probably it is about the "beam indices" defined in 9.4.2.322.1 and 9.4.2.322.2. | Align the names of the parameters and provide references to the elements to avoid misconception | Revise  TGbf Editor make changes specified in <https://mentor.ieee.org/802.11/dcn/22/11-22-0947-00-00bf-CC40-DMG-information-elements-CIDs.docx> |

***TGbf Editor: change the text in P36L55-57 as follows:***

The DMG Sensing Image Range-Direction subfield is set to 1 to indicate the capability to report three dimension Range-Direction image as a sensing responder where direction is composed of Transmit Beam Index and Receive Beam Index. These are indices into the Beam Descriptors lists in the DMG Sensing Beam Description elements of the TX and RX respectively. **(#331)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 332 | 9.4.2.322 | 39.24 | Figure 9-1002be--DMG Sensing Measurement Setup element format. Name of the field in the figure is "Optimal Subelements" It should be "Optional Subelements" | fix the name of the field | Revise  TGbf Editor: in Figure 9-1002be replace “Optimal Subelements” with "Optional Subelements" |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 643 | 9.4.2.322 | 39.26 | The Octets number of TRN-M, TRN-P, TRN-N are all equal to 1. Actully, the bits number of TRN-M, TRN-P, TRN-N are 4, 2, 2, respectively. The overall octets number of TRN-M, TRN-P and TRN-N euqals to 1. | Change the overall octets number of TRN-M, TRN-P, TRN-N to 1. | Revise  these subfields are removed per the resolution of CID 420. |
| 420 | 9.4.2.322 | 39.29 | The TRN-M, TRN-P, TRN-N fields are not necessary in the measurement setup. They can be set on a per instance or PPDU basis | Remove the fields from figure 9-1002be, Remove their description in P40L45-49 | Accept |
| 653 | 9.4.2.322 | 40.45 | The 'TRN-P', 'TRN-M', and 'TRN-N' fields in the DMG Sensing Measurement Setup element occupy 1 octet each while they only occupy 2,4, and 2 bits in the EDMG-Header-A respectively. | Replace the 'TRN-P', 'TRN-M', 'TRN-N' fields with one field of one octet and assign 2, 4, and 2 bits to the 'TRN-Unit P', 'TRN-Unit M', 'TRN-Unit-N' three fields respectively. | Revise  these subfields are removed per the resolution of CID 420 |
|  |  |  |  |  |  |
| 839 | 9.4.2.322 | 40.46 | The word will is deprecated and shall not be used when stating madatory requirements; will is only used in statements of fact (2021 IEEE SA Standards Style Manual - Section 9) | Change text to: "The TRN-M, TRN-P, TRN-N are used to indicate the values of EDMG-TRN-M, EDMG-TRN-P and EDMG-TRN-N that shall be used in EDMG bistatic and EDMG multistatic sensing." | Revise  This text is removed per resolution of CID 420 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 648 | 9.4.2.322 | 39.60 | There is no 'coordianted bistatic' in Table 9-401u Sensing Type subfield definition. | Add 'coordinated bistatic' in the sensing type table. | Revise  TGbf Editor make changes specified in [https://mentor.ieee.org/802.11/dcn/22/11-22-0947-00-00bf-CC40-DMG-information-elements-CIDs.docx](https://mentor.ieee.org/802.11/dcn/22/11-22-0918-00-00bf-CC40-DMG-sensing-req-CIDs.docx) |

TGbf Editor: replace table 9-401u with the following table:

|  |  |
| --- | --- |
| value | Description |
| 0 | Coordinated Monostatic |
| 1 | Bi-Static |
| 2 | Coordinated Bi-Static **(#648)** |
| 3 | Multi-Static |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 333 | 9.4.2.322 | 40.42 | "The Num TX Beams field and the Num RX Beams field indicate the number of transmit AWVs and receive-AWVs that are listed in the Beam List subelements." The fields are two bytes long, and the Number Beam Indices in the mentioned subelements is 8 bit long. Seems that the TX/RX Beams fields and the Number Beam indices are about the same. No need for duplication. | Suggest to keep the information in the Beam List subelements and remove the Num TX Beams field and Num RX Beams field. | Revise  TGbf Editor: remove the “Num TX Beams” and “Num RX Beams” fields from table 9-1002be. Remove also their description in P40L41-43  Perform changes in … |

***TGbf Editor: Change the text in P83L31-39 as follows:***

The sensing initiator shall set the beam list in the Tx Beam List subelement to the list of beams that are used by the transmitter during the measurement and the beam list in the Rx Beam List subelement to the lists of beams that are used by the receiver during the measurement. **(#333)** Each beam index in the TX Beam List and RX Beam List is an index into the list of beams the sensing transmitter and sensing receiver published in their DMG **(#363)** Sensing Beam Description elements for transmit and receive, respectively. If the Sensing Type subfield is set to Coordinated Monostatic, The Rx Beam List subelement is not present. **(#869)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 240 | 9.4.2.322.1 | 41.50 | There isn't a defination for Beam Index. Readers may not know the nature of a Beam Index. | Add a sentence to explain the nature of a Beam Index. For example, it is a positive interger. Or put "TBD" if its defination is still in discussion. | Reject  The text above the figure specifically states: “The beam indices represent indices in the Beam Descriptors sent within the DMG Sensing Capabilities Element” |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 258 | 9.4.2.322.3 | 42.29 | make the length of the Number Bursts in the figure 9-1002bj clear or as TBD | as in comment | Revise  TGbf editor: insert the value “1” under the “Number Bursts” field in figure 9-1002bj |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 395 | 9.4.2.322.3 | 42.38 | The definitions of Inter Burst Time and Intra Burst Time are swapped, based on the descritpion in Subclause 11.21.20.1 | Modify the definitions of Inter Burst Time and Intra Burst Time to be consistent with the descritpion in Subclause 11.21.20.1 | Revise  TGbf Editor make changes specified in [https://mentor.ieee.org/802.11/dcn/22/11-22-0947-00-00bf-CC40-DMG-information-elements-CIDs.docx](https://mentor.ieee.org/802.11/dcn/22/11-22-0918-00-00bf-CC40-DMG-sensing-req-CIDs.docx) |

***TGbf editor: In figure 9-1002bj replace field name “Inter Burst Time” with “Inter Burst Interval”***

***TGbf editor: In figure 9-1002bj replace field name “Intra Burst Time” with “Intra Burst Interval”***

***TGbf editor: change the text in P42L37-42 as follows:***

The Intra Burst Interval **(#395)** field contains the time between the start of successive instances in a burst. This field is in TSF field units.

The Inter Burst Interval **(#395)** field contains the time between the start of successive bursts of TSF Units.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 651 | 9.4.2.325 | 45.16 | Channel measurement is described as a feedback type for DMG sensing. But how this channel measurement is going to be used in wlan sensing is not clear and more description is needed. | As in comment. | Reject:  The channel measurement feedback element provides CSI information. In both 11.21.20.5.5b and 11.21.20.5.3 there is a description on when the feedback is sent. How to use it to regenerate the CI is beyond the scope of the draft. |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 424 | 9.4.2.326.1 | 45.38 | The DMG Sensing Report uses "DMG Burst Id" while the DMG Sensing Report Control element uses Sensing Burst ID -unify | Replace "DMG Burst ID" with "Measurement Burst ID" throughout this subclause | Accept |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 425 | 9.4.2.326.1 | 45.38 | The DMG sensing Report uses "DMG Sensing Instance" while the DMG Sensing Report Control elment uses "Sensing Instance Number" | Replace "DMG Sensing Instance ID" with "Sensing Instance Number" | Accept |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 259 | 9.4.2.326.1 | 45.41 | In the figure 9-1002bp the length of the Measurement Setup ID, DMG Burst ID and DMG Sensing Instance ID fields is TBD, but in the figure Figure 9-1002bn the length of the Measurement Setup ID, Sensing Burst ID fields is 8 bits, please make this consistent. | as in comment | Revise  TGbf Editor: in Figure 9-1002bp replace all TBDs with “1” |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 421 | 9.4.2.326.2 | 47.44 | subelements should have a length field, not element length field | replace "Element Length" with "Length" in figure 9-1002br also add a description of length in P47L61 | Revise  TGbf Editor make changes specified in [https://mentor.ieee.org/802.11/dcn/22/11-22-0947-00-00bf-CC40-DMG-information-elements-CIDs.docx](https://mentor.ieee.org/802.11/dcn/22/11-22-0918-00-00bf-CC40-DMG-sensing-req-CIDs.docx) |

***TGbf Editor: in Figure 9-1002br replace “Element Length” with “Length”***

***TGbf Editor: add the following text after P47L61***

The Length field is defined in 9.4.3 (Subelements). **(#421)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 422 | 9.4.2.326.3 | 49.10 | subelements should have a length field, not element length field | replace "Element Length" with "Length" in figure 9-1002bu also add a description of length in P49L26 | Revise  TGbf Editor make changes specified in [https://mentor.ieee.org/802.11/dcn/22/11-22-0947-00-00bf-CC40-DMG-information-elements-CIDs.docx](https://mentor.ieee.org/802.11/dcn/22/11-22-0918-00-00bf-CC40-DMG-sensing-req-CIDs.docx) |

***TGbf Editor: in Figure 9-1002bu replace “Element Length” with “Length”***

***TGbf Editor: add the following text after P49L26:***

The Length field is defined in 9.4.3 (Subelements). **(#422)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 423 | 9.4.2.326.4 | 51.24 | subelements should have a length field, not element length field | replace "Element Length" with "Length" in figure 9-1002bz also add a description of length in P51L32 | Revise  TGbf Editor make changes specified in [https://mentor.ieee.org/802.11/dcn/22/11-22-0947-00-00bf-CC40-DMG-information-elements-CIDs.docx](https://mentor.ieee.org/802.11/dcn/22/11-22-0918-00-00bf-CC40-DMG-sensing-req-CIDs.docx) |

***TGbf Editor: in Figure 9-1002bz replace “Element Length” with “Length”***

***TGbf Editor: add the following text after P51L32:***

The Length field is defined in 9.4.3 (Subelements). **(#423)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 840 | 9.4.2.326.3 | 51.12 | The word will is deprecated and shall not be used when stating madatory requirements; will is only used in statements of fact (2021 IEEE SA Standards Style Manual - Section 9) | Change text to: "In Monostatic sensing the Receiver Beam Index axis represents the Beam Index used by the STA to transmit and receive, and the Transmitter Beam Index axis shall not be present." | Revise  TGbf Editor make changes specified in [https://mentor.ieee.org/802.11/dcn/22/11-22-0947-00-00bf-CC40-DMG-information-elements-CIDs.docx](https://mentor.ieee.org/802.11/dcn/22/11-22-0918-00-00bf-CC40-DMG-sensing-req-CIDs.docx) |

***TGbf Editor: change the text in P51L12 as follows:***

and receive, and the Transmitter Beam Index axis is (#840) not present. Beam Index is defined in TBD.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 426 | 9.4.2.237 | 53.52 | The BRP Sensing element uses "Measurement Burst ID" whiile the DMG Sesnign Report Control element uses Sensing Burst Id - unify | Replace "Measurement Burst ID" with "Sensing Burst ID" throughout this subclause | Revise, as CID 424 named this field “Measurement Burst ID” we shall actually change subclause 9.4.2.325  TGbf Editor make changes specified in [https://mentor.ieee.org/802.11/dcn/22/11-22-0947-00-00bf-CC40-DMG-information-elements-CIDs.docx](https://mentor.ieee.org/802.11/dcn/22/11-22-0918-00-00bf-CC40-DMG-sensing-req-CIDs.docx) |

***TGbf Editor: thourghout subclause 9.4.2.325 (DMG Sensing Report Control element) replace “Sensing Burst ID” with “Measurement Burst ID".***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 514 | 9.4.2.327 | 53.52 | What is the UID? It is not defined yet, add the definition | as in comment | Revise  TGbf Editor make changes specified in [https://mentor.ieee.org/802.11/dcn/22/11-22-0947-00-00bf-CC40-DMG-information-elements-CIDs.docx](https://mentor.ieee.org/802.11/dcn/22/11-22-0918-00-00bf-CC40-DMG-sensing-req-CIDs.docx) |

***TGbf Editor: Remove the UID/AID field from figure 9-1002cc.***

***TGbf Editor: Change the text in P54L4 as follows:***

The Measurement Setup ID, Measurement Burst ID and Sensing Instance Number fields identify

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 427 | 9.4.2.239 | 56.08 | Description of Sector Gain subfield is missing from the description of the Sector Desriptors field | Add a description for the sector gain after P56L24 | Revise  TGbf Editor make changes specified in [https://mentor.ieee.org/802.11/dcn/22/11-22-0947-00-00bf-CC40-DMG-information-elements-CIDs.docx](https://mentor.ieee.org/802.11/dcn/22/11-22-0918-00-00bf-CC40-DMG-sensing-req-CIDs.docx) |

***TGbf Editor: insert the following text after P56L24:***

The Sector Gain indicates the antenna gain of the sector. It has value of 0 to 255 with 0.5dB resolution. **(#427)**

**References: Draft P802.11bf\_D0.1**